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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,759	10/30/2003	Takushi Yokoyama	0425-1062P	6887

2292 7590 04/16/2007  
BIRCH STEWART KOLASCH & BIRCH  
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FALLS CHURCH, VA 22040-0747

EXAMINER
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GELLNER, JEFFREY L

ART UNIT	PAPER NUMBER
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3643

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	04/16/2007	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 04/16/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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## Office Action Summary

Application No.

10/695,759

Applicant(s)

YOKOYAMA ET AL.

Examiner

Jeffrey L. Gellner

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 December 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-6, 8-24 and 27 is/are pending in the application.
- 4a) Of the above claim(s) 5, 6, 8, 9, 16 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 10-15, 18-24 and 27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

The Declaration under 37 CFR 1.132 filed by Dr. Jianzhou Wu on 26 December 2006 is insufficient to overcome the rejection of claims 1-4, 7, 10-15, and 18-27 based upon Poole et al., Kishi et al., and Hinshaw et al. as set forth in the last Office action because:

First, it refers only to the system described in the above referenced application and not to the individual claims of the application. Thus, there is no showing that the objective evidence of nonobviousness is commensurate in scope with the claims. See MPEP § 716.

A second, the data presented compares the instant invention's composition with the composition of Poole et al. However, the rejection is based on the composition of Poole et al. as modified by Kishi et al. and Hinshaw et al. and not Poole et al. alone.

### ***Claim Objections***

Claims 3 and 4 are objected to because of the following informalities:

As to claim 3 when dependent from claim 1, the terms "(f)" and "(g)" are unclear in meaning since there are no "lower" letters.

As to claim 3 when dependent from claim 1, the terms "(c)", "(e)", "(f)", and "(g)" are unclear in meaning since there are no "lower" letters.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 12 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claim 12, The language of "if required" of line 8 renders the claim indefinite because it is unclear whether the language of "if required" refers to component (g), by itself, or to group of components (e), (f), and (g). Examiner considers the language of "if required" to refer to component (g), by itself.

As to claim 18, it depends upon claim 16 which is a cancelled claim. An art rejection is given using claim 15 as it independent claim.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 10-15, 18-21, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mendenhall et al. (US 6,143,102; 5<sup>th</sup> document on Applicants' 1449 received 18 March 2004) in view of Labino (US 2,946,694) in further view of Matsuda et al. (US 5,780,767).

As to claims 1 and 27, Mendenhall et al. discloses a gas generating composition (abstract) comprising by mass 0.5 to 5% glass ("silica" of col. 5 lines 14-24); by mass 1 to 15% aluminum hydroxide (col. 5 lines 6-12). Not disclosed is the glass being phosphate glass and a binder.

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Labino, however, discloses phosphate glass (col. 1 lines 43-46 and Table 1); and, Matsudat et al. disclose a binder of Na carboxymethylcellulose (col. 3 lines 5-7). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the composition of Mendenhall et al. by using phosphate glass as disclosed by Labino so as use a silica that resists acids (Labino at col. 2 lines 39-43) and to add a binder as disclosed by Matsuda et al. so as to process more easily into a wafer or tablet (see Mendenhall et al. at col. 5 lines 43-47).

As to claims 2 and 12, Mendenhall et al. discloses a gas generating composition (abstract) comprising by mass 0.5 to 5% glass ("silica" of col. 5 lines 14-24); by mass 1 to 15% aluminum hydroxide (col. 5 lines 6-12); an organic fuel (col. 4 lines 22-34); an oxygen-containing oxidizing agent (col. 4 lines 56-61). Not disclosed is the glass being phosphate glass and a binder. Labino, however, discloses phosphate glass (col. 1 lines 43-46 and Table 1); and, Matsuda et al. disclose a binder of Na carboxymethylcellulose (col. 3 lines 5-7). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the composition of Mendenhall et al. by using phosphate glass as disclosed by Labino so as use a silica that resists acids (Labino at col. 2 lines 39-43) and to add a binder as disclosed by Matsuda et al. so as to process more easily into a wafer or tablet (see Mendenhall et al. at col. 5 lines 43-47).

As to claim 3 for both claims 1 and 2, the limitations of claim 1 or 2 are disclosed as described above. Not disclosed is the use of an additive. Matsuda et al., however, discloses the use of a second oxide that is a metal oxide ("copper oxide" of col. 2 lines 37-44). It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the composition of Mendenhall et al. as modified by Labino and Matsuda et al. by using a second

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oxidizer as disclosed by Matsuda et al. so as to optimize the composition for its particular purpose.

As to claim 10, Mendenhall et al. as modified by Labino and Matsuda et al. further disclose a guanidine compound (“guanidine nitrate” of col. 4 lines 1-21 of Mendenhall et al.).

As to claim 11, Mendenhall et al. as modified by Labino and Matsuda et al. further disclose a basic metal nitrate (“basic copper nitrate” of col. 4 lines 56-61 of Mendenhall et al.).

As to claim 13, Mendenhall et al. as modified by Labino and Matsuda et al. further disclose the additive component (f) as cupric oxide (“copper oxide” of col. 2 lines 40-44 of Matsuda et al.).

As to claim 14, Mendenhall et al. as modified by Labino and Matsuda et al. further disclose the binder in an amount of 1 to 5% mass (col.32 lines 61-62 of Matsuda et al.).

As to claim 15, Mendenhall et al. discloses a gas generating composition (abstract) comprising by mass 0.5 to 1% glass (“silica” of col. 5 lines 14-24); by mass 1 to 15% aluminum hydroxide (col. 5 lines 6-12); guanidine nitrate (col. 4 lines 22-34); basic copper nitrate (col. 4 lines 56-61). Not disclosed is the glass being phosphate glass and a binder. Labino, however, discloses phosphate glass (col. 1 lines 43-46 and Table 1); and, Matsuda et al. disclose a binder of Na carboxymethylcellulose (col. 3 lines 5-7). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the composition of Mendenhall et al. by using phosphate glass as disclosed by Labino so as to use a silica that resists acids (Labino at col. 2 lines 39-43) and to add a binder as disclosed by Matsuda et al. so as to process more easily into a wafer or tablet (see Mendenhall et al. at col. 5 lines 43-47).

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As to claim 18, Mendenhall et al. as modified by Labino and Matsuda et al. further disclose aluminum hydroxide (col. 5 lines 6-12 of Mendenhall et al.).

As to claim 19 for claims 1, 2, and 15, the limitations of claims 1, 2, and 15 are disclosed as described above. Not disclosed is the composition being in the shape of a single perforated cylinder or perforated cylinder obtained by extrusion molding. It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the composition of Mendenhall et al. as modified by Labino and Matsuda et al. by being in the shape of a single perforated cylinder or perforated cylinder obtained by extrusion molding so as to fit the desired air bag's inflator configuration.

As to claim 20 for claims 1, 2, and 15, Mendenhall et al. as modified by Labino and Matsuda et al. further disclose an inflator for an air bag (col. 1 lines 5-32 of Mendenhall et al.).

As to claim 21, Mendenhall et al. as modified by Labino and Matsuda et al. further disclose an inflator for an air bag (col. 1 lines 5-32 of Mendenhall et al.).

Claims 4 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mendenhall et al. (US 6,143,102; 5<sup>th</sup> document on Applicants' 1449 received 18 March 2004) and Labino (US 2,946,694) in further view of Matsuda et al. (US 5,780,767) in further view of Kishi et al. (US 4,021,275).

As to claim 4 for both claims 1 and 2, the limitations of claim 1-3 are disclosed as described above. Mendenhall et al. further discloses component (c) by mass 30 to 60% (col. 4 lines 18-21); component (d) by mass 60% (col. 4 lines 36-61); Matsuda et al. discloses component (e) by mass 10% or less (col. 3 lines 61-62). Not disclosed is component (f) at 10%

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by mass and component (g) at 5% by mass. Kishi et al., however, discloses use of glass (component a) and silicon dioxide at a specific surface area of 100 to 500 m<sup>2</sup>/g (col. 3 lines 14-15 and col. 4 lines 21-24). It would have been obvious to one of ordinary skill in the art at the time of the invention to further modify the composition of Mendenhall et al. as modified by Labino and Matsuda et al. by having the additive (second oxidizer of Matsuda et al.) at 10% mass or less depending upon use and to have glass with silicon dioxide as disclosed by Kishi et al. so as to better capture the residues of the combustion (see Kishi et al. at col. 4 lines 28-39).

As to claims 22-24 for both claims 1 and 2, the limitations of claims 1 and 2 are disclosed as described above. Not disclosed is the phosphate glass particles having a diameter of 10 to 300 microns. Kishi et al., however, discloses glass with a diameter of 10 to 300, 10 to 100, or 10 to 50 microns ("5 to 300 microns" of col. 4 lines 45-46). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the composition of Mendenhall et al. as modified by Labino and Matsuda et al. by having the phosphate glass with particles having a diameter of 10 to 300, 100, or 50 microns as disclosed by Kishi et al. so as to capture the combustion products more effectively (see Kishi et al. at col. 4 lines 30-39).

### ***Response to Arguments***

Applicants' arguments filed 26 December 2007 have been fully considered but they are not persuasive. Applicants' argument is that the Declaration of Wu overcomes the rejection of Poole in view of Kishi et al. and Hinshaw et al.

As stated above, his declaration is not dispositive because: (1) it refers only to the system described in the above referenced application and not to the individual claims of the



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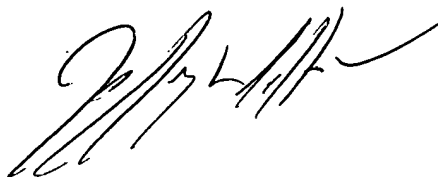
application. Thus, there is no showing that the objective evidence of nonobviousness is commensurate in scope with the claims (see MPEP 716); and, (2) the data presented compares the instant invention's composition with the composition of Poole et al. However, the rejection is based on the composition of Poole et al. as modified by Kishi et al. and Hinshaw et al. and not Poole et al. alone.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey L. Gellner whose telephone number is 571.272.6887. The examiner can normally be reached on Monday-Friday, 8:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Poon can be reached on 571.272.6891. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jeffrey L. Gellner  
Primary Examiner  
Art Unit 3643